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Friday

April 1, 1983



Published by

## FOREIGN TECHNOLOGY DIVISION

# Daily SMAP

Soviet News Abstracts Publication

Author: Andreyev, Vasiliy, corre-  
spondent (interviewer)

Title: PRIZE-WINNING WORK ON CURRENT-LAYER DYNAMICS AND SOLAR ACTIVITY

Primary source: Moskovskiy komsomol-  
ets, March 6, 1983, No. 55 (13625),  
p. 4, cols. 8-9

Abstract: The article is an inter-  
view with B. Somov, the head of the  
solar plasma study group under the  
USSR Academy of Sciences' Astronomical  
Council and a senior science associate  
of the academy's Physics Institute  
imeni Lebedev (FIAN). Somov is iden-  
tified as a member of a group of phy-  
sicists who were awarded the 1982 USSR  
State Prize for a cycle of works en-  
titled "Dynamics of Current Layers and  
Solar Activity". Commenting on its  
nature and significance, Somov says  
the work provides a theoretical sub-  
stantiation of the chain of processes  
occurring in solar plasma, from the  
formation of sunspots and active re-  
gions to the accumulation and libera-  
tion of energy in the form of flares  
in the sun's atmosphere. These phe-  
nomena were studied by various methods,  
including analytical and modeling  
methods. Experiments conducted with  
equipment developed at the USSR Aca-  
demy of Sciences' Institute of Space  
Research, the Siberian Institute of  
Earth Magnetism, and FIAN reportedly  
have confirmed the theory formulated  
by Somov's group.

Somov goes on to mention possible  
areas of application of the findings  
of the work. They include space  
flight and controlled thermonuclear  
fusion. The work is said to provide  
a good theoretical basis for develop-  
ing improved methods for forecasting

solar flares and, consequently, radia-  
tion danger to spacecraft and their  
crews, for example. Academician Boris  
Kadomtsev is said to believe that both  
solar flares and the phenomenon of  
destructive instability of plasma in  
tokamak reactors may sometimes have  
the same underlying mechanism. Further  
study of the operation of this mechan-  
ism may permit the development of new  
elementary-particle accelerator sys-  
tems of very high power.

Title: TECHNOLOGY FOR STUDIES OF  
EARTH FROM SPACE DESCRIBED

Primary source: Ekonomicheskaya gaz-  
eta, March 1983, No. 12, p. 2, cols.  
1-5

Abstract: The article is a survey of  
the scope of studies of the Earth from  
space for economic purposes. The sur-  
vey was compiled by the department on  
problems of the atmosphere and the  
oceans of the USSR State Committee for  
Science and Technology. Estimates re-  
portedly indicate that an economic ef-  
fect of 500 to 600 million rubles is  
yielded annually from the use of data  
obtained from space in the interests  
of various branches of the economy.

A section of the article is devoted  
to the technology of studies of the  
Earth from space. It identifies two  
'subsystems' for this -- photographic  
and operational. The photographic sub-  
system is said to be intended for the  
study of processes that take place  
slowly, and of stable formations on  
the Earth's surface. Special photo-  
graphic equipment with high resolving  
power and geometric imaging precision  
is carried on various types of space-  
craft. Photographic data are used

(continued next page)